

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**APPLICANT:** Radek Oleksiewicz**EXAMINER:** Solis, E.**Parent Serial N .:** 10/317,326**GROUP ART UNIT:** 3747**Parent Filed:** December 12, 2002**ATTY DKT NO.:** D5174**TITLE:** REDUCING PRE-CYCLE WARM-UP FOR ELECTRONIC COMPONENTS

Commissioner for Patents
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PRELIMINARY AMENDMENT/REMARKS UNDER 37 C.F.R. §1.111

Dear Sir:

The following remarks are filed with the enclosed Continuation-in-Part Application.

REMARKS

1. Ma (U.S. Patent No. 5,727,384) teaches a management system for an engine having a rapid heating system for a hot operating system. The management system measures the time since the engine was last switched off and estimates temperature of the hot operating system based on that time. The management system controls the rapid heating system in dependence on the estimated temperature of the *hot operating system*. See Column 2, lines 13-25.

Ma may be to be referring to direct temperature measurement of either the vaporizer, catalytic converter, the catalyst, or the glow plug, when he refers to "temperature sensors measuring these hot elements directly" in Column 1, lines 25-26. Ma further states in Column 1, lines 21-35 that "A difficulty currently encountered in complying with statutory regulations is that the temperature sensing elements available do not have the required proven durability and direct temperature measurement is not currently an available solution [to] this problem." The present application does not teach or suggest directly measuring the temperature of the vaporizer, catalytic converter, the catalyst, or the glow plug, as suggested by Ma.

Ma does not teach or suggest determining a temperature for a first *electronic* component and when the temperature for the first *electronic* component exceeds a temperature condition, reducing pre-cycle warm-up for a second electronic

component, as described in independent claim 1. Ma does not teach or suggest utilizing a temperature of a driver capable of driving an electronic component to determine whether or not to reduce pre-cycle warm-up for the electronic component, as described in independent claim 15.

Ma estimates the temperature of a non-electronic component, the hot operating system (referring either to a catalytic converter or fuel vaporizer), based on the time elapsed since the last time the engine was switched off. Given Ma's teachings, if the engine was last turned off a very long time ago and it was very cold outside rendering the hot operating system cold by Ma's standards, but numerous unsuccessful attempts to turn the engine over (i.e., the engine did not start) took place over the last few minutes, Ma would allow the rapid heating system to turn on, even those the numerous unsuccessful attempts to turn the engine over have either warmed up the rapid heating system sufficiently or even damaged the rapid heating system, because Ma triggers his temperature measurement based on the last time the engine turned off. Thus, if the engine does not turn over but his rapid heating system is engaged, the system taught by Ma is helpless to protect his rapid heating system. The present invention, however, will protect the components in the same situation because of the elements provided in the claims. Therefore, Ma does not teach or suggest the claims of the present application.

2. Izawa et al. (U.S. Patent No. 6,005,761) teaches on overheat protection device that is strictly designed to prevent overheating of a load. Izawa does not teach or suggest that the load has a pre-cycle warm-up nor how or why to reduce pre-cycle warm-up for such components, as set forth in the claims of the present application.

3. Ohsaka et al. (U.S. Patent No. 6,205,010) teaches on overheat protection device based on heavy current detection. Certain loads have a large in-rush current, such as a lamp or a motor, and trigger the overheat protection device simply by being turned on, thereby turning off the load almost immediately after it is turned on, resulting in the inability to either turn on such a load or to protect it from overheating. To overcome this problem, Ohsaka teaches placing temperature detecting means in the neighborhood of an electronic power element for the load to provide an interrupt signal that prevents overheating, but does not turn-off the load when it turns on. See Column 2, lines 2-12 and FIG. 1 and FIG. 3. Ohsaka does not teach or suggest that the load has a pre-cycle warm-up nor how or why to reduce pre-cycle warm-up for such components, as set forth in the claims of the present application.

4. Neither Ma, Izawa, nor Ohsaka teaches or suggests the various dependent claims of the present application. For example, neither Ma, Izawa, nor Ohsaka teaches reducing pre-cycle warm-up by reducing pre-cycle warm-up time to a non-zero time as described in claims 10 and 22. Neither Ma, Izawa, nor Ohsaka teaches or suggests reducing pre-cycle warm-up by reducing pre-cycle warm-up current to a non-zero current as described in claims 12 and 24. Neither Ma, Izawa, nor Ohsaka teaches or suggests that the temperature condition falls between a temperature condition when the second electronic component is warm and a temperature condition below which the second electronic component is damaged, as described in claims 13 and 26. Neither Ma, Izawa, nor Ohsaka teaches or suggests that pre-cycle warm-up for a component is reduced by a first amount at a first temperature condition and pre-cycle warm-up for the component is reduced by a second amount at a second temperature condition, as described in claims 14 and 27.

5. Thus, the claims of the present invention are not taught or suggested by Ma, Izawa, and/or Ohsaka. Combining these references fails to teach or yield the invention as claimed. The combination of these references fails to teach or suggest all the elements of the claims. Further, one of skill in the art would not be motivated to make such a combination. Therefore, the present invention is not obvious in light of any combination of Ma, Izawa, and/or Ohsaka.

6. The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication may advance the prosecution of the present application. Notice of allowance of claims 1-27 is hereby respectfully requested.

Respectfully submitted,

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